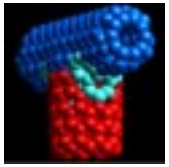
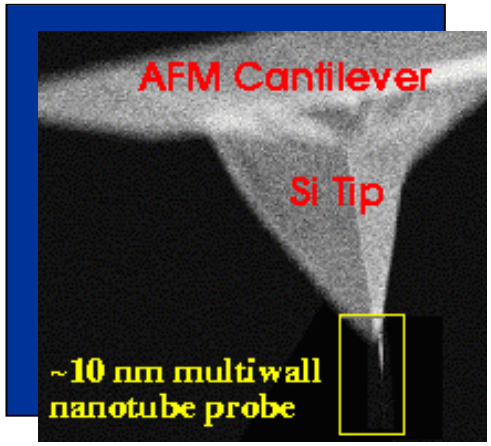
Ames Research Center

CNT in Microscopy



Atomic Force Microscopy is a powerful technique for imaging, nanomanipulation, as platform for sensor work, nanolithography...

Conventional silicon or tungsten tips wear out quickly. CNT tip is robust, offers amazing resolution.

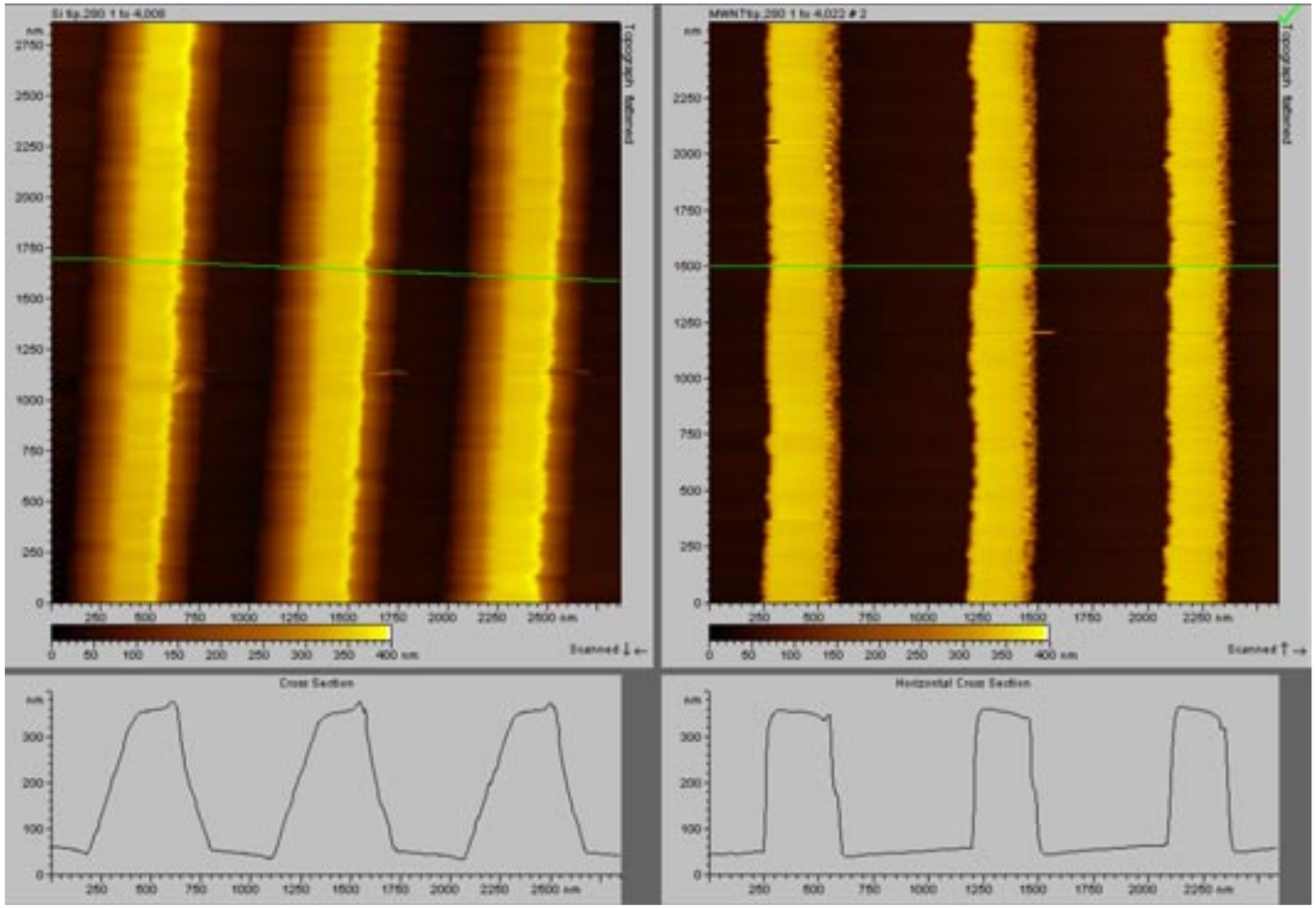


Simulated Mars dust

H. Dai

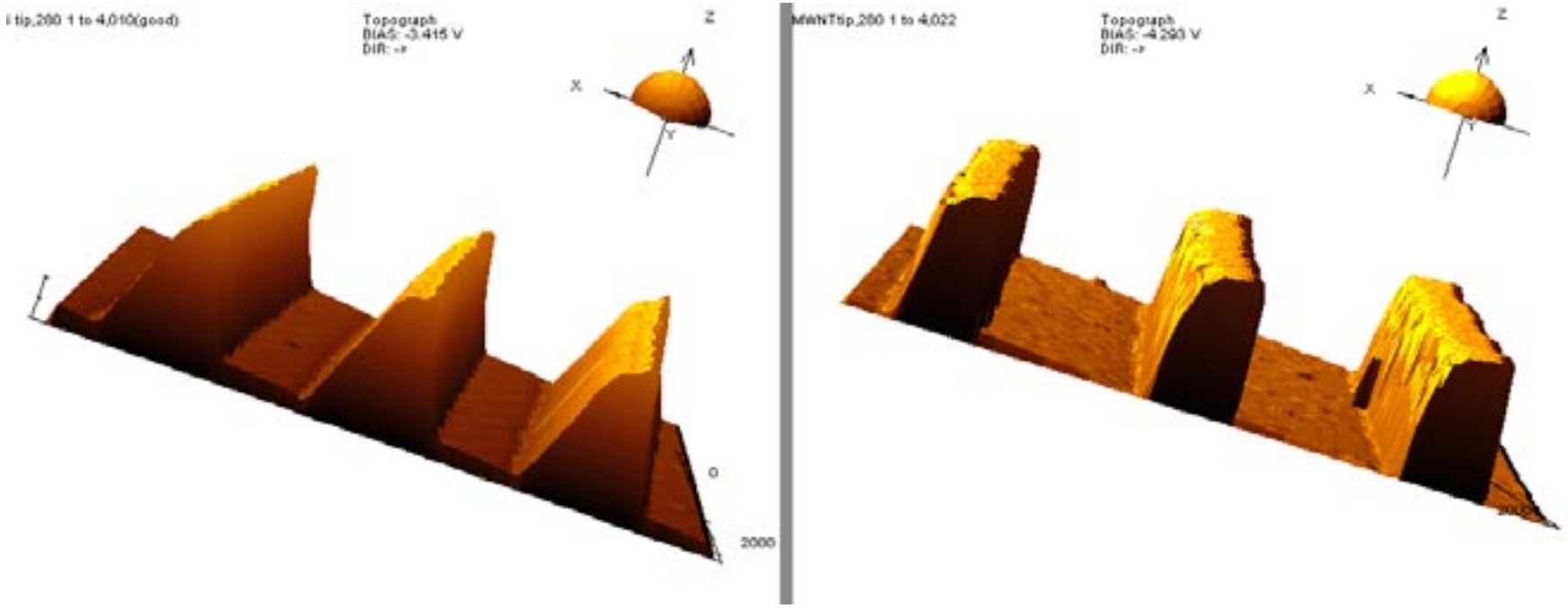
NASA Ames Research Center
Ramsey Stevens, Lance Delzeit, Cattien Nguyen

280 nm Line/Space Array of Polymeric Resist on silicon Substrate



Silicon Tip

Multi-Walled Carbon Nanotube Tip

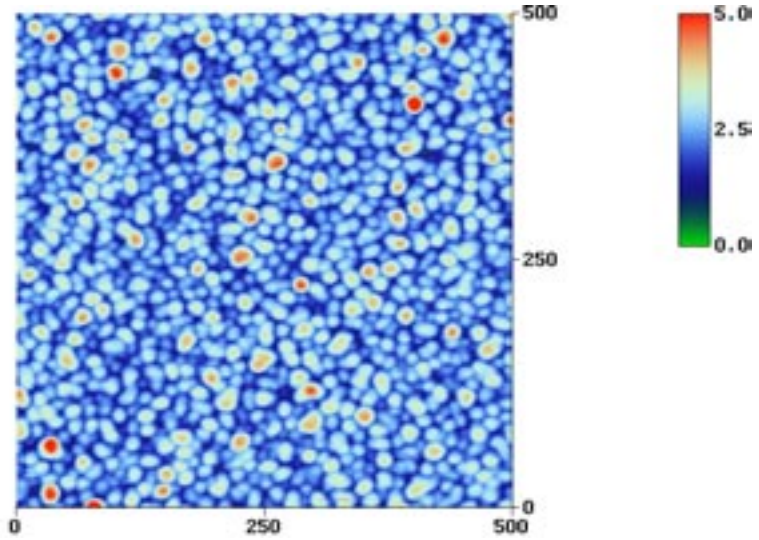


Regular Silicon Probe

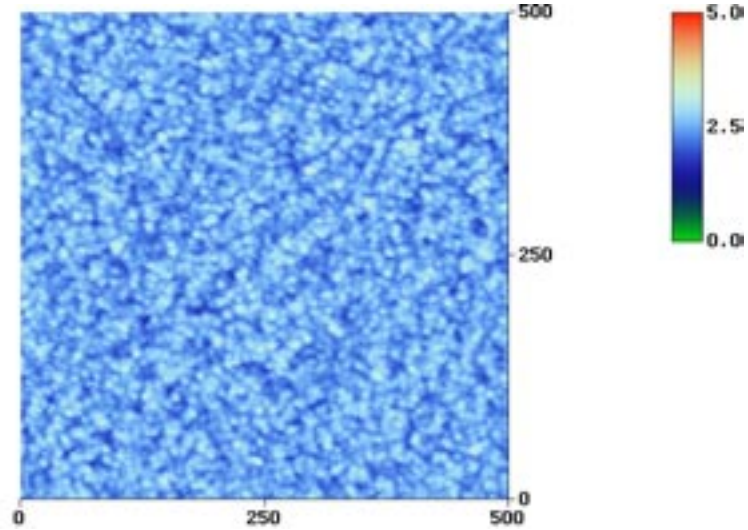
MWNT Probe

AFM images of a 280 nm line/space array of polymeric photoresist (300 nm thickness) on a silicon substrate acquired with a conventional silicon probe (left image) and a multiwalled carbon nanotube probe (right image).

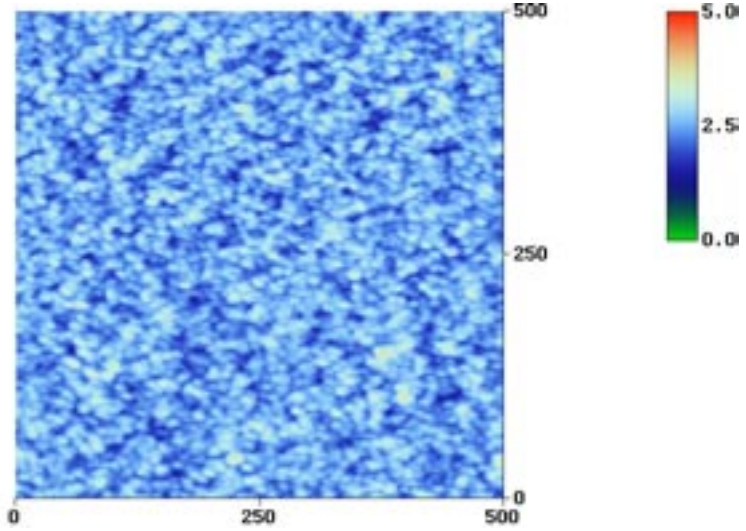
AFM Imaging with Single Wall Nanotube Tips



2 nm thick Au on Mica



5 nm thick Ir on Mica



Si_3N_4 on Silicon substrate